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# Notes on Some Phonological Aspects of Northern Thailand

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## Notes on Some Phonological Aspects of Northern Thai<sup>1)</sup>

by

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### Introduction

This paper aims to present systematically a few phonological aspects of the Northern Thai (NT) dialect<sup>2)</sup> which drew the author's interest during a series of his interviews with northern Thai informants. The interviews which were conducted from September 1964 through June 1965<sup>3)</sup> in Chiang Mai, Chiang Rai and Mae Hong Son area, were primarily intended to serve for a practical purpose of acquiring fluency in the dialect useful, as an intermediate language, for field surveys on Tibeto-Burman languages scattered in the northern Thai-Burmese border area. This pragmatic operation, however, has yielded the following observations on the phonology of the Northern Thai dialect, which are presented here, with the hope that they may contribute, if not much then a little, to the enrichment of Thai dialectology.

The NT dialect has attracted attention of scholars of various nationalities since considerably old days,<sup>4)</sup> and its historical relationships with other Thai languages have long been studied by a number of linguists. Particularly, the rules of phonemic correspondence with the Central Thai (CT) dialect are so well-known that they do not deserve a further discussion here.<sup>5)</sup> The dialect commonly referred to as NT or Khammüang,

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- 1) The author gratefully acknowledges the help he received from many persons in learning and recording NT. Special thanks are due to the following NT friends who so patiently explained to the author the intricacies of their dialects. That is, Miss Ae (family name unknown, Chiang Rai), Miss Suphaphorn Itsarangkul (Lampang), Mr. Thorngkham (family name unknown, Chiang Mai), Mr. Thiraphong Nüangthanorm (Phrae) and Miss Wanna (family name unknown, Phrae).
- 2) "Khammüang" (/khammuang/), used by the people of the region to call the NT dialect, can be considered to be a generic term for many small dialects in Northern Thailand which are different from, but sharing common characteristics with, each other.
- 3) For the details of the interviews and the field work, see the author's "Akha-go No Genchi Chosa Yori (Notes on the Field Survey of the Akha Language)," *The Southeast Asian Studies*, Vol. III, No. 3. Kyoto, 1965.
- 4) See, Mitani, Yasuyuki. "Tai Shogo Hikaku Kenkyu No Tenbo (Perspective on Historical and Comparative Studies on Thai Languages)," *The Southeast Asian Studies*, No. 2. Kyoto, 1963.
- 5) It seems to the author that studies on NT is much more advanced in the historical comparative field than in the field of exhaustive descriptive studies based upon modern structural linguistics. See, Shafer, Robert. *Bibliography of Sino-Tibetan Languages*, 2 vols. Otto Harrassowitz, Wiesbaden, 1957 & 1963. Chulalongkorn University. *Bibliography of Material about Thailand in Western Languages*. Bangkok, B.E. 2503 (A.D. 1960).

however, comprises varieties of mutually intelligible subdialects and sub-subdialects. The differences among these subdialects are yet to be investigated. The transition from one dialect from another is so gradual that it hardly allows to establish clearcut boundaries among them. Nevertheless there must be some features which are common to all the subdialects customarily classified as NT and which distinguish them from the dialects of the other regions. These common features define NT and serve to provide a basis for establishing boundaries between NT and the other dialects.<sup>6)</sup> For the precise definition of the dialectal boundaries, however, data of the kind as presented here are to be gathered in many other localities.

Differences between NT and CT---or any other dialects--- are manifested on the levels of phonology, grammar, semantics and lexicon. Here, some of the most significant phonological differences are taken into consideration. Differences among the dialects of Chiang Rai (Amphoe Mae Chan), Chiang Mai (Amphoe Muang), Lampang (Amphoe Muang) and Phrae (Amphoe Muang) will be described and be contrasted with CT as represented by Bangkok speech of the educated people and the writing system. Further, some of the features that characterize the above dialects as NT will be discussed.

The phonological difference between NT and CT lies in tones, initial consonants, and the interdependence of the two. Only very slight differences are observed in nuclear vowels, and no difference at all, in final consonants.<sup>7)</sup>

## I Initial Consonants and Nuclear Vowels

In the CT writing system, the initial consonants are classified into three categories: the High Series, which includes voiceless aspirated stops, and sonorants, /ph, th, ch, kh, s, f, h, m, n, ŋ, y, r, l, w/<sup>8)</sup>; the Middle Series, which includes voiced and voiceless unaspirated stops, /p, t, c, k, ʔ, b, d/; the Low Series, which phonemically duplicates the High Series but uses different symbols. The initial consonant clusters in CT are /pr, pl, phr, phl, tr, kr, kl, kw, khr, khl, khw/, which are classified into the same three series according to the first elements of the clusters.

The following table shows the correspondence of initial consonants between CT and NT arranged in accordance with the CT writing system. When one consonant of CT corresponds to two or more different phonemes of NT, the split will be represented by

- 6) A similar point of view has been expressed by Jones, Robert Jr. in his "Phonological Features of Northern Thai," *Ethnographic Notes on Northern Thailand*, edited by L.M. Hanks, J.R. Hanks and L. Sharp. Data Paper: No. 58, Cornell University, Ithaca, N.Y., 1965.
- 7) The transcription here is basically that of Marry Haas, which is used in most of the literatures on Thai. See, Haas, Marry R. *The Thai Writing System*, American Council of Learned Societies, Washington, D.C., 1965.
- 8) The High Series includes those consonants which have been converted from the Low Series by means of the orthographical device, i.e., /hčɔ nam, ʔɔɔ nam/.

a horizontal line, i.e.,  $\frac{a}{a'}$ . If a CT phoneme corresponds to one NT phoneme but takes different phonetic shapes in subdialects, the different phonetic shapes will be represented by a vertical line,  $a|a'$ .<sup>9)</sup>

	Central Thai					Northern Thai				
H. S.	ph	th	ch	kh		ph	th	s	kh x	
	m	n		ŋ		m	n		ŋ	
	f	s			h	f	s			h
	w		y			w		$\frac{y}{n}$		
		l					l			
		r					l			
M. S.	p	t	c	k	?	p	t	c	k	?
	b	d				b	d			
L. S.	ph	th	ch	kh		p	$\frac{t}{th}$	c	$\frac{k}{kh x}$	
	m	n		ŋ		m	n		ŋ	
	f	s			h	f	s			h
	w		y			wŋ		$\frac{v}{n}$		
		l					l			
		r					h			
							l			

H. S. = High Series    M. S. = Middle Series    L. S. = Low Series

# Consonant Clusters :

	Central Thai			Northern Thai		
H. S.		phl		ph		
	khr	khl	khw	—	kh x	khw xw
M. S.	pr	pl		p	p	
	tr			k		
	kr	kl	kw	kh x	k	kw
L. S.	phr	phl		ph	$\frac{p}{ph}$	
	khr	khl	khw	kh x	k	khw xw

9) These horizontal and vertical divisions have nothing to do with Brown's "vertical sorting and horizontal sorting." See, Brown, Marvin J. *From Ancient Thai to Modern Dialects*, Social Science Association Press of Thailand, Bangkok, 1965.

The following are the NT consonant clusters which do not exist in CT, that is, /tw, thw, cw, ħw, ħw, sw, yw, lw/. In addition to these clusters, NT has three syllabic nasals, ['m, 'n, 'ŋ]. These syllabic consonants can be described phonemically as /ʔm, ʔn, ʔŋ/, and occur only as bound morphemes denoting such as “one”, or “not”. Both the clusters and the syllabic nasals are of rather low function, their occurrence being limited to a small number of particular elements.

Differences in nuclear vowels are slight and simple. The following table contrasts the vowel systems of CT and NT. It is noticed, however, that contrast in vowel length is more vague in NT than in CT.

#### Simple Vowels :

Central Thai			Northern Thai		
i	ui	u	i	ui	u
e	ə	o	e	ə	o
ɛ	a	ɔ	ɛ	a	ɔ

#### Vowel Clusters :


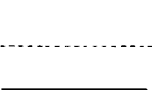

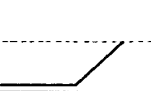
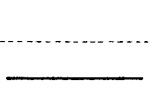


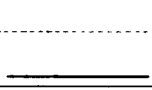
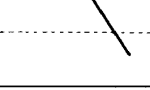
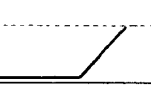
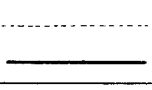
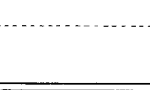
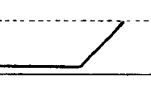
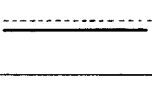
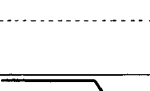
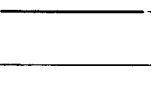
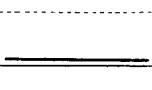
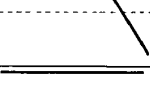

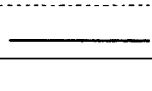
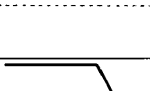
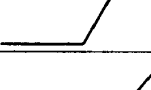


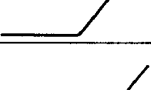
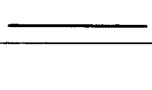

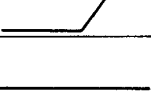
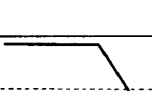
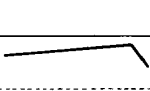
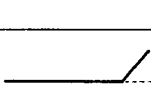

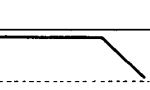
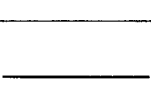
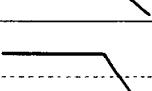
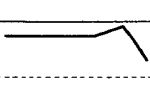
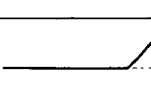
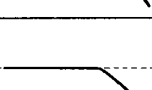

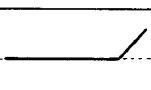
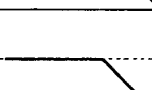
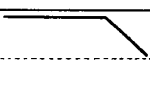


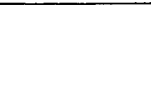
Central Thai			Northern Thai		
ia	ua	ua	ia	ua ia	ua
				əə	oo























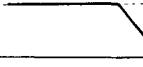

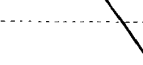

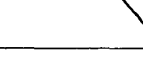

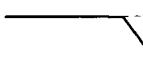

## II Interdependence of Initial Consonants and Tones

In the CT writing system, tones are determined by the combination of initial consonants, syllabic structures and tonal marks. For the analysis of the distributional relationships between the tones and the initial consonants, the syllabic structures should be classified into the following three types: (i) CVV, CVN, CVVN; (ii) CVVS; (iii) CVS.<sup>10)</sup> Tonal marks do not occur in the types (ii) and (iii), except for onomatopoeias and some words of foreign origin.

In the syllables of type (i), the inherent tone of the High Series is rising, and that inherent in the Middle and the Low Series is mid-level. The tonal mark “1” with the High and the Middle Series indicates a low-level tone, while with the Low Series, is indicated a falling tone. The tonal mark “2” with the High and the Middle Series indicates a falling tone, and with the Low Series, a high level tone.

10) C represents an initial consonant (cluster), and V, a nuclear vowel. N and S represent a sonorant final and a stop final respectively.

Initial Consonants	Syllabic Types		(i) CVV, CVVN, CVN		
	Dialects	Tone Marks	No Mark	“1”	“2”
High Series	Central Thai				
	Chiang Rai				
	Chiang Mai				
	Lampang				
	Phrae				
Middle Series	Central Thai				
	Chiang Rai				
	Chiang Mai				
	Lampang				
	Phrae				
Low Series	Central Thai				
	Chiang Rai				
	Chiang Mai				
	Lampang				
	Phrae				

Initial Consonants		Syllabic Types	(ii) CVVS	(iii) CVS
		Dialects		
High Series	Central Thai			
	Chiang Rai			
	Chiang Mai			
	Lampang			
	Phrae			
Middle Series	Central Thai			
	Chiang Rai			
	Chiang Mai			
	Lampang			
	Phrae			
Low Series	Central Thai			
	Chiang Rai			
	Chiang Mai			
	Lampang			
	Phrae			

In the syllabic types (ii) and (iii), the High and the Middle Series carry a low-level tone. The Low Series carries a falling tone in (ii), and a high-level tone in (iii).

This classificatory system will reveal the following differences when applied to NT.

(1) The inherent tone of the High Series is low-rising. The Middle Series splits into two groups, that is, voiceless unaspirated stops, /p, t, c, k/ and voiced stops plus a glottal stop/constriction, /b, d, ʔ/. The inherent tone of the former is low-rising, thus falling together with the High Series, while that inherent in the latter group is mid-rising or mid-level. The tone inherent in the Low Series falls together with the latter group of the Middle Series, that is, mid-rise or mid-level.

(2) The tonal mark “1” with the High and the Middle Series indicates a low-level tone, and with the Low Series, a low-falling tone. The tone mark “2” with the High and the Middle Series indicates a high-level or a high-fall, but with the Low Series, the same mark indicates a high-fall or a high-dip.<sup>11)</sup>

(3) In the syllables of type (ii), the High and the Middle Series bear a low-level tone, and the Low Series, a low-falling tone. When the syllables are of type (iii), on the other hand, the High and the Middle Series bear a high-rise as against the Low Series, which carries a high-fall or a high-level.

In addition to these differences in terms of the classificatory system, the phonetic realization of some of the tones differs as we pass from one dialect to another. The above table shows the phonetic contours/pitches of the tones in the four NT dialects in contrast with CT.

### III Conclusive Remarks

In spite of variations in some of the tones and the other phonemes, the NT dialects show remarkable similarity not only to each other but also to the CT dialect. Of the four NT dialects, that of Chiang Mai is most similar to CT, in that the tone mark “2” with the Low Series in the syllabic type (i) indicates a high-dip ---phonetically almost identical to the CT tone in the same environment--- as against a high-fall common to the other three, and that the same tonal mark with the High and the Middle Series in the same syllabic type indicates a high-fall instead of a high-level. The tonal contrast between the mark “2” with the High and the Middle Series and the mark “1” with the Low Series is considerably obscure in Chiang Mai dialect.

Since, being the center of Northern Thailand, Chiang Mai, is in a close contact with Bangkok, the aforementioned similarities of the Chiang Mai dialect to CT may justifiably be attributed to the latter's influence upon the former. In this connection, it is to be

11) “High-dip” is a term used by Purnell to describe that Chiang Mai tone which is indicated by the tone mark “2” with the Low Series in type (i). See, Purnell, Herbert C. *A Short Northern Thai-English Dictionary (Tai Yuan)*, Overseas Missionary Fellowship, Chiang Mai, 1963.



noted that the shapes of the above-mentioned tones in the dialects of more rural districts such as Fang, Mae Taeng and Hot---all in Chiang Mai Province--- are almost identical to those of the other three NT dialects treated here. This interpretation is not, however, applicable to the mid-level of the Chiang Mai dialect, for it is not certain whether or not the mid-levelness is caused by the contact with CT. The dialects of Mae Hong Son (Amphoe Mae Sariang), Lamphun (Amphoe Muang) and other localities, which are in much less contact with CT, have mid-level tones, too. On the other hand, the mid-rising contour is observed not only in the other three NT dialects described here, but also in those of Chiang Saen, Mae Sai and Mae Suai---all in Chiang Rai Province. Accordingly, we must be satisfied at the present state of knowledge to make a tentative remark that the NT dialects may be divided into two groups, that is, one with the mid-level, and the other, with the mid-rise.

One of the most orthodox classifications of tonal systems is into contour system and register system but very few of the tone languages are exclusively of contour system, just as most of the languages of register system are mixed with the other system.<sup>12)</sup> Both CT and NT are no exceptions, being of contour system with the overlapping of register system, but the extent to which the latter overlaps the former varies among the dialects. The following table shows the tonal contrasts in all of the five dialects. This table reveals the following register contrasts in addition to the contrasts among the four contours, that is, rise, fall, level and dip.

- (1) In CT, there is a contrast of low vs. mid vs. high in the level contour.
- (2) In the Chiang Mai dialect, there are a low-mid-high contrast in the level contour and a low-high contrast in the falling contour.
- (3) In the Chiang Rai and Lampang dialects, there are a low-high contrast in the level and the falling contours and a low-mid contrast in the rising contour.
- (4) In the Phrae dialect, there are low-mid-high contrast in the level contour; a low-high contrast in the falling contour; and a low-mid contrast in the rising contour.

The above facts will lead to the conclusion that the overlapping of register system is most conspicuous in the Phrae dialect, which is in turn followed by the Chiang Rai and the Lampang dialects. Of the four NT dialects, the Chiang Mai dialect has the slightest register overlapping. As a whole, however, NT has more of register overlapping than CT.

In addition to the foregoing features which differentiate NT from CT, the following observations are to be noted.

- (1) In the ordinary style of speech, the CT vowel phoneme, /a/, is nasalized when preceded by /h/. In CT, this nasalization is confined to /a/, while in NT all the

12) See, Pike, Kenneth L. *Tone Language*, Ann Arbor, 1948.

vowels are nasalized when they follow /h/.

(2) In NT, the low-rising tone becomes a low-level tone when followed by any of the other tones with close juncture. This means that the contrast between the low-rise and the low-level is "neutralized". Neutralization of this type does not occur in CT. For example, NT /sǎam/ «three» + /móon/ «o'clock» = /sàammóon/ «three o'clock».

Discussion in this paper is confined to those words which are common to all of the five dialects, but this kind of contrastive study on phonological features will be of help in identifying dialects. When a field worker knowing CT is confronted with the necessity of identifying and using a dialect, it will be most profitable for him to take the following steps before proceeding to the recording of grammatical and lexical structures. That is, (1) prepare a list of words which are common to most of the Thai dialects and are sorted out according to the classificatory system adopted in this paper, and (2) observe what differences are revealed by applying the classificatory system to the dialect concerned. These preliminary procedures will no doubt put his recording and description of the dialect on a very smooth trail.

Syl- labic Types	Tones	Ll	Ml	Hl	f	Lf	Hf	r	Lr	Mr	Hr	Hd
	Dialects											
(i)	Central Thai	×	×	×	×			×				
	Chiang Rai	×		×		×	×		×	×		
	Chiang Mai	×	×			×	×		×			×
	Lampang	×		×		×	×		×	×		
	Phrae	×	×	×		×	×		×	×		
(ii)	Central Thai	×			×							
	Chiang Rai	×				×						
	Chiang Mai	×				×						
	Lampang	×				×						
	Phrae	×				×						
(iii)	Central Thai	×		×								
	Chiang Rai						×				×	
	Chiang Mai			×							×	
	Lampang			×							×	
	Phrae						×				×	

L, M and H represent low, mid and high respectively.

l, f, r and d represent level, fall, rise and dip respectively.

#### IV Vocabulary

The following list consists of those words which are examples for what has been explained in the foregoing chapters. It is not the author's intention here to present

data for any other studies, though the list can be of service in collecting material for the identification of dialects.<sup>13)</sup>

The symbols which represent the tones in the list are as set out below.

(1) /(no symbol)/	Mid-level	[33]
(2) /á/	High-level	[55-554 <sup>14)</sup> ]
(3) /à/	Low-level	[22-11]
(4) /ā/	High-dip	[454]
(5) /ǎ/	Mid-rise	[34]
(6) /ǣ/	High-rise	[45]
(7) /ǵ/	Low-rise	[14-13]
(8) /â/	High-fall	[54-53]
(9) /ǎ/	Low-fall	[41-31]

Central Thai	Chiang Rai	Chiang Mai	Lampang	Phrae	English Gloss
(Tones)					
hǎa	hǎa	hǎa	hǎa	hǎa	to look for
kaa	kǎa	kǎa	kǎa	kǎa	crow
dii	dii	dii	dii	dii	to be good
maa	mǎa	maa	mǎa	mǎa	to come
hâa	hǎa	hǎa	hǎa	hǎa	five
pâa	pǎa	pǎa	pǎa	pǎa	aunt
bâa	bǎa	bǎa	bǎa	bǎa	to be mad
mǎa	mǎa	mǎa	mǎa	mǎa	horse
sii	sii	sii	sii	sii	four
kii	kii	kii	kii	kii	how many
dâa	dâa	dâa	dâa	daa	to swear
lâa	lâa	lâa	lâa	lâa	to hunt
khôn	khôn	xôn	khôn	xôn	hair of the body
phên	phên	phên	phên	phen	flat object
khôn	khón	xôn	khón	xón	to be thick (liquid)
dom	dóm	dom	dóm	dóm	to smell
tôn	tón	tôn	tón	tón	stalk
tàw	tàw	tàw	tàw	taw	tortoise

13) The list of words most useful for dialect studies is Brown's 1387 (or 818) word list. See, Brown, Marvin J. *op. cit.*

14) The CT contour which can be represented phonetically as [554] is included in the high-level tone here, though it can as well be regarded as a high-dip which falls together with (4).

Central Thai	Chiang Rai	Chiang Mai	Lampang	Phrae	English Gloss
lon	lón	lon	lón	lón	to singe
lôm	lôm	lôm	lôm	lôm	to capsize
lón	lón	lôn	lôn	lôn	to overflow
khăay	khăay	xăay	khăay	xăay	to sell
khàaŋ	khàaŋ	xàaŋ	khàaŋ	xaŋ	top
khâam	khâam	xâam	khâam	xâam	to cross
kaaŋ	kăaŋ	kăaŋ	kăaŋ	kăaŋ	to spread out
kòon	kòon	kòon	kòon	koon	before
kaaŋ	kaaŋ	kaaŋ	kaaŋ	kaaŋ	fish bone
nóon	nóon	nóon	nóon	nóon	to inundate
nôon	nôon	nôon	nôon	nôon	calf
nóon	nôon	nôon	nôon	nôon	younger person
síp	síp	síp	síp	síp	ten
káp	káp	káp	káp	káp	with
lák	lák	lák	lák	lák	to steal
khàat	khàat	xàat	khàat	xaat	to lack
pèet	pèet	pèet	pèet	pèet	eight
khâap	khâap	xâap	khâap	xâap	to hold in teeth

(Initial Consonants)

phôm	phôm	phôm	phôm	phôm	hair of the head
thăam	thăam	thăam	thăam	thăam	to ask
chîik	siik	siik	siik	siik	to tear
khâaw	khâaw	xâaw	khâaw	xâaw	rice
măa	măa	măa	măa	măa	dog
nŭu	nŭu	nŭu	nŭu	nŭu	rat
ŋwàk	ŋwàk	ŋwàk	ŋwàk	ŋiak	gum of teeth
fôn	fôn	fôn	fôn	fôn	rain
sǝon	sǝon	sǝon	sǝon	sǝon	two
hŭa	hŭa	hŭa	hŭa	hŭa	head
wîi	wîi	wîi	wîi	wîi	comb
yùu	yùu	yùu	yùu	yuu	to be present
yâa	ňáa	ňáa	ňáa	ňáa	grass
lăŋ	lăŋ	lăŋ	lăŋ	lăŋ	back
rĭan	lĭan	lĭan	lĭan	lĭan	medal <sup>15)</sup>

15, 16, 17) These, and some other, words are borrowings, which do not occur in Shan, but are included here because their occurrence is common to most of the NT dialects. They can be understood to be Brown's "B→Li words." See, Brown, Marvin J. *op. cit.*

Central Thai	Chiang Rai	Chiang Mai	Lampang	Phrae	English Gloss
pii	pǐi	pǐi	pǐi	pǐi	year
taa	tǎa	tǎa	tǎa	tǎa	eye
cèt	cǎt	cǎt	cǎt	cǎt	seven
kǐn	kǐn	kǐn	kǐn	kǐn	to eat
ʔaw	ʔǎw	ʔaw	ʔǎw	ʔǎw	to take
bin	bín	bin	bin	bin	to fly
dam	dám	dam	dám	dám	to be black
phoo	póo	poo	póo	póo	to be enough
thaaŋ	táaŋ	taaŋ	táaŋ	táaŋ	way
théεŋ	thêεŋ	thêεŋ	thêεŋ	thêεŋ	to have a miscarriage
chaay	cáay	caay	cáay	cáay	male
chôp	sôp	sôp	sôp	sôp	to like
khem	kêm	kem	kêm	kêm	to be salty
khũwn	khũwn	khũwn	khũwn	khũwn	night
mii	mii	mii	mii	mii	to exist
noon	nóon	noon	nóon	nóon	to lie down
ŋen	ŋèn	ŋen	ŋèn	ŋèn	silver
faŋ	fáŋ	faŋ	fáŋ	fáŋ	to listen
sáay	sāay	sāay	sāay	sāay	left
wan	wán	wan	wán	wán	day
yaaw	ñáaw	ñaaw	ñáaw	ñáaw	to be long
yaa	yáa	yaa	yáa	yáa	medicine
luum	lúum	luum	lúum	lúum	to forget
rwa	húa	hwa	húa	hía	boat
rót	lôt	lót	lót	lôt	vehicle
wua	ŋúa	wua	ŋúa	wúa	cattle
raaŋ	láaŋ	laaŋ	láaŋ	láaŋ	rail

(Initial Consonant Clusters)

phlǎan	phǎan	phǎan	phǎan	phǎan	to destroy
khlooŋ	khooŋ	xooŋ	khooŋ	xooŋ	flock of elephants
khwǎn	khwǎn	xwǎn	khwǎn	xwǎn	soul
práp	pǎp	pǎp	pǎp	pǎp	to fine
ploom	pǎom	pǎom	pǎom	pǎom	to be false
traa	kǎa	kǎa	kǎa	kǎa	mark
kron	khǒn	xǒn	khǒn	xǒn	to sneeze
klua	kǎa	kǎa	kǎa	kǎa	salt

Central Thai	Chiang Rai	Chiang Mai	Lampang	Phrae	English Gloss
kwaan	kwǎan	kwǎan	kwǎan	kwǎan	deer
phrík	pkîk	phík	phík	phîk	phik
phluu	púu	puu	púu	púu	betel
phleen	phéen	pheen	phéen	phéen	song
khraw	kháw	xaw	kháw	xáw	beard
khlaan	káan	kaan	káan	káan	to crawl
khwaay	khwáay	xwaay	khwáay	xwáay	buffalo
thamnaay	twáay	twaay	twáay	twáay	to prophesy <sup>16)</sup>
thawǎay	thwǎay	thwǎay	thwǎay	thwǎay	to offer to the higher <sup>17)</sup>
—	cwáam	cwaam	cwáam	cwáam	to tear off
—	cwâay	cwâay	cwâay	cwâay	to move away
—	ñwâam	ñwâam	ñwâam	ñwâam	to grip
—	ñwâay	ñwâay	ñwâay	ñwâay	to smile
—	ɣwâay	ɣwâay	ɣwâay	ɣwâay	to turn
—	swâan	swâan	swâan	swâan	to sprinkle
—	swáam	swaam	swáam	swáam	to feel one's way
—	swâat	swâat	swâat	swâat	to come along
—	swàay	swàay	swàay	swaay	to shake
—	swàan	swàan	swàan	swaan	to get back to normal
—	swêe	swêe	swêe	swêe	to lock up
—	swêen	swêen	swêen	swêen	to protrude
—	ywáay	ywaay	ywáay	ywáay	to step
—	lwâat	lwâat	lwâat	lwâat	to pin up
—	lwâan	lwâan	lwâan	lwâan	to be dis-composed
—	lwâam	lwâam	lwâam	lwâam	to murmur
—	lwáay	lwaay	lwáay	lwáay	(the name of a year <sup>18)</sup> )

(Nuclear Vowels)

chín	cîn	cîn	cîn	cîn	meat
nùŋ	nùŋ	nûŋ	nùŋ	nuŋ	one
dùk	dǎk	dǎk	dǎk	dǎk	to be late
yuŋ	ñùŋ	ñuŋ	ñùŋ	ñùŋ	mosquito
thũŋ	thǒŋ	thǒŋ	thǒŋ	thǒŋ	bag
khěm	khěm	khěm	khěm	khěm	needle
ɣən	ɣən	ɣən	ɣən	ɣən	silver

18) Corresponding to the /cunlāsàkkàràat triisòk/ (?).

Central Thai	Chiang Rai	Chiang Mai	Lampang	Phrae	English Gloss
khom	khóm	khom	khóm	khóm	to be bitter
kě?	kě?	kě?	kě?	kě?	sheep
kan	kăn	kăn	kăn	kăn	mutually
kỏ?	kỏ?	kỏ?	kỏ?	kỏ?	island

(Nuclear Vowel Clusters)

nĩi	nĩi	nĩi	nĩi	nĩi	to run away
mũu	mũu	mũu	mũu	mũu	hand
hũu	hũu	hũu	hũu	hũu	ear
mêek	mêek	mêek	mêek	mêek	cloud
pàət	pàət	pàət	pàət	pàət	to open
khóoŋ	kôoŋ	kôoŋ	kôoŋ	kôoŋ	to bend
khěen	khěen	xěen	khěen	xěen	arm
pàa	pàa	pàa	pàa	paa	woods
rỏn	hỏn	hỏn	hỏn	hỏn	to be hot
khĩan	khĩan	xĩan	khĩan	xĩan	to write
mũan	mũan	mũan	mũan	mĩan	to be same
kủak	kủak	kủak	kủak	kiak	sandal
tua	tũa	tũa	tũa	tũa	body
thũay	thỏoy	thỏoy	thỏoy	thỏoy	bowl

(Syllabic Consonants)

--	?m̥	?m̥	?m̥	?m	not <sup>19)</sup>
---	?m̥	?m̥	?m̥	?m	} one <sup>20)</sup>
---	?n̥	?n̥	?n̥	?n	
---	?ŋ̥	?ŋ̥	?ŋ̥	?ŋ	

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19) e. g., /?m̥páykaa/ «Are (you) not going?», /?m̥hũu/ «(I) do not know.», etc.

20) e. g., /sip?m/ «eleven», /met?n̥/ «one meter», /sỏk?ŋ/ «one sawk, i. d., about half a yard», etc.

21) This bibliography contains only those descriptive works which will be practically useful.

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